Intro:

The purpose of this document is to provide a checklist of cleaning and maintenance activities. Additional information can also be found in the Prelude Synthesizer User's Manual pg 105. The preventative maintenance (PM) for the Prelude Peptide synthesizer is divided into two categories, 1) maintenance following each synthesis and 2) monthly maintenance. The PM for this document is a cleaning procedure which can be completed by anyone qualified to use the Prelude Peptide Synthesizer and is not an in depth electro-mechanical maintenance evolution. A more detailed procedure with screen shots is available on the Prelude computer. To access the online help from anywhere in the "Suser" application, press the F1 key or click help →help topics: select expand Operations Menu → Cleaning and finally the appropriate cleaning selection.

Minimum Required Personal Protective Equipment (PPE)

1. Lab Coat
2. Gloves (Nitrile while handling dimethylformamide (DMF))
3. Goggles or safety glasses

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PM after EACH Synthesis

Minimum Required Personal Protective Equipment (PPE)

1. Lab Coat
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I. Clean the reaction vials (RVs) and collection vials (CVs)

1. Replace the reaction RVs and CVs with the labeled cleaning RVs and CVs.
2. Discard the RVs and cap the CVs with peptides in them.
3. Under **OPERATION** select **CLEANING** and then select **WASH RVs.**
4. Under **OPERATION** select **CLEANING** and then select **COLLECT BACK FLUSH.**
5. Dump liquid from cleaning CVs into **DCM** (dichloromethane) waste

II. Clean Cleaving bottle (line 8):

1. Remove cleavage bottle from line -8 and rinse with DCM, replace with cleaning bottle.
2. Under **OPERATION** select **CLEANING** and then select **Cleave Bottle Solvent Back Flush.**
3. Under **OPERATION** select **CLEANING** and then select **Cleave Bottle Nitrogen Back Flush.**
4. Remove line-8 waste bottle and transfer into the DCM waste bottle. Do Not replace until needed for next synthesis

III. Clean bottles 3,5, and Amino Acid (AA) bottles

1. **Vent solvents 3,5,** and **all amino acid bottles**.
2. Remove all AA bottles and solvent bottles 3 and 5.
    a. If AA is over **4** weeks old dispose of it, if it is less than **4** weeks old cap and store in the refrigerator next to synthesizer.
3. Dump activator from line-5 in DMF waste. Return the bottle to line 5 for cleaning cycle.
4. Line-3 deprotectant should be removed and retained for future use.
5. Place Line-3 cleaning bottle on line-3
6. Replace AA bottles with empty AA cleaning bottles, labeled with location
7. Click **Select for solvents 3,5 and all AA**, run **Solvent Back Flush** (requires 30 minutes) and **Nitrogen Back Flush** (requires 30 minutes)
8. Remove cleaning bottle 3,5, and 8. Dump solvent into the DMF waste.
9. Rinse each cleaning bottle once with DMF
10. Rinse each cleaning bottle once with DCM and leave off line until the next synthesis.
11. Place unused lines into the available flask with other solvent bottles.
12. Rinse each AA bottle that does not contain an amino acid to be retained with DMF and Ethanol once to DCM waste, then wash and dry bottles in the hood.

IV. Waste Removal:

1. Place waste from synthesizer into the waste bottle under the hood.

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Monthly Cleaning Procedure

Minimum Required Personal Protective Equipment (PPE)

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3. Goggles or safety glasses

Procedure:

1. Replace all solvent bottles (SB) with waste bottles **EXCEPT** Line-2. Remove and cap solvent bottle 2 (DCM)
    a. Remove Solvent Bottle 1 (DMF), check that it contains at least 1.0L of DMF and attach to Line 2.

NOTE: This will be the cleaning solvent used. All other reagent bottles should be removed and replaced with waste bottles as they will become contaminated with DMF from Line-2.

    b. Solvent Bottle-1: Replace with a brown opaque waste bottle .
    c. Solvent Bottle-2: Replaced with 1L of DMF
    d. Solvent Bottle-3: Replace with waste bottle
    e. Solvent Bottle-4: SB-4 is a cleaning bottle. Check it is empty.
    f. Solvent Bottle-5: Remove the base/activator solution and discard if it will not be used within 48hrs time it was mixed. Replace with a clean bottle.
    g. Solvent Bottle-6: SB-6 is a cleaning bottle. Check it is empty
    h. Solvent Bottle-7: SB-7 is a cleaning bottle. Check it is empty
    i. Solvent Bottle-8: SB-8 is cleaning solvent, remove and place line in Erlenmeyer flask. Wash and replace bottle
2. Run System Clean from “Suser” application. For detailed help with screen shots press F1 from while in the “Suser” application or select “help” at the top right of the screen.
    a. 1 hour required for system clean
3. After System Clean is complete, remove and dispose of contents in waste bottles.
4. Archive Job Database.
    a. From the “SUser” application, click on tools → Login. Enter the Supervisor password
    b. Click Tools → Database →Archive All Data
    c. READ WARNING and make the appropriate selection
    d. SUser software will close and archive will begin. For more information including screen shots refer to the online help file by pressing F1 or refer to page 78 of the Prelude Synthesizer Users Manual.

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